



*A NIOSH Education and Research Center for
Occupational & Environmental Health & Safety*

Mountain and Plains Education and Research Center

Summary Annual Report

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Program Overview

The Mountain and Plains Education and Research Center (MAP ERC) is a joint effort of the University of Colorado (UC), Colorado State University (CSU), National Jewish Health, Denver Health and Hospital Authority, and the University of New Mexico Health Sciences Center. Housed in the Colorado School of Public Health (CSPH), the MAP ERC fills an important regional need in the West (Colorado, New Mexico, Arizona, Wyoming, Montana, North Dakota and South Dakota) both by engaging in new occupational health and safety initiatives and by collaborating with neighboring Education and Research Centers. Our mission is to improve occupational and environmental health and safety through education, research, and community partnerships. We help address the critical need for well-trained occupational and environmental health professionals in our region by offering graduate level and post-graduate training and continuing professional education. Visit us online at: <http://maperc.ucdenver.edu/>.

With 48 core faculty members, the Center provides training in Occupational and Environmental Medicine, Industrial Hygiene, Ergonomics, Occupational Health Psychology, and Health Physics. In 2010-2011, 20 trainees received full or partial support from the MAP ERC. In 2011, 24 trainees graduated from our programs and joined the regional and national workforce of occupational health and safety professionals.

Center wide activities include our Pilot/Small Projects Research Program, a Diversity Recruitment Program that is integrated with our Outreach Program, Interdisciplinary Integration, and a Continuing Education Program.

Academic Program	Core Faculty	Adjunct/ Supporting Faculty	Total Trainees	NIOSH Funded Trainees	Graduates 2009 - 2010
Industrial Hygiene	13	22	19	10	6
Occupational/Environmental Medicine	23	26	2	2	2
Health Physics	6	-	15	2	10
Occupational Health Psychology	3	5	7	4	4
Ergonomics	3	7	4	2	2

Academic Programs

Occupational and Environmental Medicine Residency (E. Brigitte Gottschall MD, MSPH, Director; Cecile Rose, MD, MPH, Co-Director)

Twenty-three Core faculty and 26 supporting faculty members contributed to clinical and research training of 2 practicum year only residents who graduated on June 30, 2011. A joint endeavor of UC, National Jewish Health, and Denver Health, the program provides ACGME accredited training that includes an MPH degree. In the past year, we have refined the interactions between OEM residents and trainees from the four partner training programs on the CSU campus. A re-designed, well-received Occupational Environmental Health Interdisciplinary Seminar focuses on interaction of trainees with community partners to advance the mission of occupational and environmental health. Our residents have continued to engage in scholarly activities with submission of abstracts to regional and national meetings and platform presentations at local and regional meetings. Both of our recent graduates presented abstracts at the American Occupational Health Conference in 2011. The residency director and program faculty prepared and completed an ACGME reaccreditation site visit.

Industrial Hygiene Training Program (Stephen Reynolds, PhD, CIH, Director; William Brazile, PhD, CIH, Co-Director)

Thirteen Core Faculty and 22 supporting faculty members contributed to the professional and research training in Industrial Hygiene. Dr. Koehler is the newest faculty to join the program, bringing expertise in aerosols and air pollution. This CSU-based program in the Department of Environmental and Radiological

Health Sciences provides ABET-accredited training at the masters and doctoral level. Achievements this past year included further progress in promoting increasing interaction between industrial hygiene students and the other trainees on the CSU and UCD campus, especially through the Occupational and Environmental Health Interdisciplinary Symposium (see above). Industrial Hygiene students continued their tradition of national awards including AIHA Scholarships and 2 Best Poster Awards at AIHCE 2011.

Ergonomics Training Program (John Rosecrance, PhD, PT, CPE, Director; David Gilkey PhD, DC, CPE, Associate Director)

Masters of Science and doctoral degrees are offered by three core and seven supporting faculty members. This highly interdisciplinary program is structured to provide competency toward the goal of helping graduates become Certified Professional Ergonomists and Certified Human Factors Professionals. By design, the program has strong linkages with occupational health psychology and industrial hygiene through shared course work, seminars, site visits, and research. Students presented research results at several national and international meetings and were active in publishing their work. Major research topics included safety culture, ergonomics culture, workers' compensation costs of construction injuries, carpal tunnel syndrome among dairy works, and the prevention of injuries in agricultural and construction fields. In 2010-2011, the faculty developed additional student learning and research opportunities at other ERCs as well as at universities in Europe and Australia.

Occupational Health Psychology Training Program (Lorann Stallones, PhD Director, Kimberley Henry, PhD Co-Director, John Rosecrance, PhD, PT, CPE Co-Director)

The field of Occupational Health Psychology concerns itself with applying psychology to improving the quality of work life and to protecting and promoting the safety, health and well-being of workers. This OHP training program is one of only two supported by the NIOSH ERC program nationally. It provides education using an interdisciplinary model, with course work in psychology, ergonomics, industrial hygiene, and epidemiology. Based at CSU, three core faculty and five supporting faculty train masters and doctoral students. Trainees have presented at national and international conferences, participated in the MAP ERC Interdisciplinary course, visited work sites with other MAP ERC trainees, and coordinated a monthly lectures series inviting local and national experts to address OHP topics. One trainee completed a summer internship at NIOSH in Cincinnati with the Training Research Education Branch (TREB), Education and Information Division (EID). Another was lead author on a paper published in the Journal of Safety Research. Professor Stallones became the new director of this program in 2011.

Health Physics Training Program (Thomas Johnson, PhD, Director)

A critical shortage in the supply of qualified radiation safety professionals continues to exist in the field of health physics, especially in our region. The Health Physics training program at CSU has been able to attract top students for the graduate program because of MAP ERC support. Last year, the six core faculty members in this ABET-accredited program trained both Masters of Science and doctoral students, and contributed to the development of our new interdisciplinary course taken by all MAP ERC supported trainees. This program continued to lead many of the MAP ERC interdisciplinary site visits, including visits to the EPA's ASPECT aircraft, a uranium mill, a power plant, and others.

Continuing Education

Karen Mulloy, DO, MSCH, Director.; David Gilkey, PhD, DC, CPE Associate Director, Lili Tenney, MPH, Assistant Director

In 2010-2011, we trained 2,111 individuals through 36 CE courses offered live or online, for a total of 2,649 person days of training. The CE program offerings draw from more than 300 occupational and environmental health and safety related topics presented by core and supporting faculty, plus seminars presented by visiting professors. Our offerings have expanded based on results and needs identified by

the CE/Outreach Advisory Board and regional assessments, including: collaborating with Rocky Mountain Center (Utah) ERC and Rocky Mountain Academy for Occupational and Environmental Medicine (RMAOEM) to develop and co-sponsor the first conference held in Helena, MT for occupational medicine physicians; partnering with the Association of Occupational Health Professionals in Healthcare (AOHP) to co-sponsor their national conference and provide CME credits; hosting the 1st annual MAP ERC Energy Summit concerning worker health and safety in the renewable energy sector; developing a comprehensive industrial hygiene exam review course (CIH Online) to be completed and available in May 2012; and a Hazwoper training course for Hispanic workers being provided in Denver, CO in conjunction with the Rocky Mountain Center (Utah) ERC. The CE program continues to engage surrounding states, neighboring ERCs, and the NIOSH Western States Office in collaboration on occupational health surveillance and Occupational Health Indicator reports, specifically to next provide trainings in ND and SD. The CE program has been able to expand its education offerings this year due to generous philanthropic support received from Pinnacol Assurance, the major workers' compensation insurance provider in Colorado.

Center Wide Activities

Lee Newman, MD, MA, Center Director; Stephen Reynolds, PhD, CIH, Deputy Director; Kenneth Scott, MPH Outreach Director, William Brazile PhD, CIH and Dominic Martinez, Diversity Program Co-Directors, John Reif, PhD, Pilot/Small Projects Research Program Director

Administrative core built to promote interdisciplinary Coordination

A successful ERC is more than the sum of its training programs. Our 2010-11 highlights included enhancement of our social media channels and use to reach a greater, more diverse audience of occupational health and safety professionals, including: a new website (www.maperc.ucdenver.edu); increased subscriptions (>500) to our weekly e-newsletter, "RoadMAP"; 17,459 "post views" to our Facebook page (www.facebook.com/MAPERC), active Twitter followers (@map_erc); and student environmental and occupational safety and health videos on our YouTube Channel (www.youtube.com/csphMAPERC).

We refined the Center's goals, objectives, and evaluation metrics using Logic Models for each component of the Center Wide Activities and expanded our program evaluation activities. We helped create an additional 3 credit hours of integrated curricular offerings at UCD and CSU. We facilitated work site visits and developed R2P projects for MAP ERC students to participate on as part of our "Occupational and Environmental Health Interdisciplinary Symposium" course.

Diversity Program

The Public Health Academy: The CSPH, UC Office of Diversity and Inclusion, and MAP ERC conducted the first annual "Public Health Academy" (PHA). This two-week long program introduces high school students to public health principles and public health careers. Two days were devoted to OHS careers. Our staff and faculty continue in a mentoring role for students from this program.

Partnering with Organizations that Represent Vulnerable Workers: The MAP ERC is developing relationships with various organizations that serve potentially vulnerable workers, including: the Hispanic Contractors of Colorado, the Laboratory to Combat Human Trafficking (LCHT), and the United Food and Commercial Workers Union. A safety and health professional from UFCW was recently added to the External Advisory Panel.

Outreach Program

Surveillance: The MAP ERC continued to support occupational health surveillance throughout the region by contributing to Occupational Health Indicator Reports for Wyoming, Montana, North Dakota and South Dakota. The Dakota reports were produced in collaboration with the Midwest Center for Occupational Health and Safety (MN).

Total Worker Health: The MAP ERC takes a comprehensive view of worker health and safety. We started collaborating with Pinnacol Assurance, Colorado's major workers' compensation carrier, on workplace health promotion for small and mid-size businesses. We collaborated with a major hospital system on a research project to promote "age friendly workplaces," in partnership with the University of Maryland School of Nursing.

Reaching Related Disciplines: The MAP ERC has helped integrate an OSH focus into various related, but not OSH-specific, programs through collaboration with: the UC School of Medicine's Rural Health Track, the National Hearing Conservation Association, CSU's Construction Management Program and the UC Construction Engineering Program.

Holding Mother Earth Sacred: The MAP ERC-sponsored photojournalism exhibit displayed at the 2010 National APHA meeting and 2011 regional OEM conference. Through partnership with the Northwest Center for Occupational Health and Safety, the exhibit has also reached tribal groups in the Pacific NW at the annual UW Spring Pow Wow, the Duwamish Tribe Longhouse, Northwest Indian College, the University of Washington Bothell and the Squaxin Island Tribe Museum Library and Research Center.

Pilot/Small Projects Research Program

We funded 5 of 21 applications for pilot/small projects research. The new topics included: Bacterial Contamination of Healthcare Worker Uniforms; PtD and Construction Safety Management Tool for Sustainable Building Projects (R2P); Is Green Diesel Healthy Diesel?; Characterizing Inhalable Size Distributions in the Workplace; and Impact of Aging Workforce on Workers' Compensation Claims.

In our first four years, 25 award recipients published 18 peer-reviewed papers in OSH or allied field journals and leveraged their preliminary data to obtain federally funded career development awards and help establish their careers. The projects have focused on six NORA sectors: Agriculture, Construction, Healthcare and Social Assistance, Manufacturing, Public Safety, Services, and Transportation, with an emphasis on research-to-practice (R2P).